HC49/4H CRYSTALS

ISSUE 15; 1 NOVEMBER 2010 - RoHS 2002/95/EC

Description

- Industry standard leaded package
- Resistance welded, hermetically sealed in an inert atmosphere, glass to metal seals on leads
- Variants available include but are not limited to:-
  3L = a centre mounted third leg grounds the can
- Low profile versions available please contact our sales offices for details
- Please see our HC49/4HSMX for a SMD standard stock alternative
- Stock parts listed at the beginning of this chapter

General Specifications

- Load Capacitance (C_L): 10pF to 75pF or Series
- Drive Level: 500µW max
- Ageing: ±5ppm typ per year at 25°C, ±1ppm available on request
- Shunt Capacitance (C_0): 7pF max

Standard Frequency Tolerances and Stabilities

- ±10ppm, ±20ppm, ±30ppm, ±50ppm, ±100ppm

Operating Temperature Ranges

- 0 to 50°C
- –10 to 60°C
- –20 to 70°C
- –30 to 80°C
- –40 to 85°C
- –55 to 105°C

Storage Temperature Range

- –55 to 125°C

Environmental

- Shock: 981m/s^2, 6ms, 3 times in each of 3 mutually perpendicular planes
- Vibration: 10Hz-60Hz, 0.75mm amplitude, 60Hz-500Hz, 98.1m/s^2, 30mins in 3 mutually perpendicular planes

Packaging

- Loose in bulk pack, 100pcs per bag
- Tape and reel in accordance with EIA-468-C, 1kpcs per reel (please see pages 372 & 373)

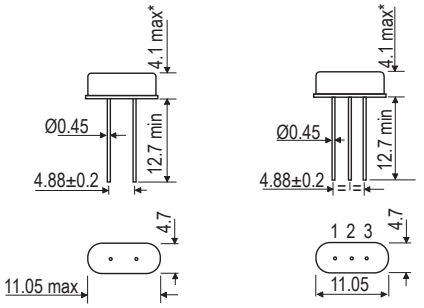
Ordering Information (*minimum required)

- Frequency*
- Model*
- Frequency Tolerance (@25°C)*
- Frequency Stability (over operating temperature range)*
- Operating Temperature Range*
- Load Capacitance*
- Overtone*

Example

- 10.0MHz HC49/4H
  50/50/–40 to 85C/10 FUND

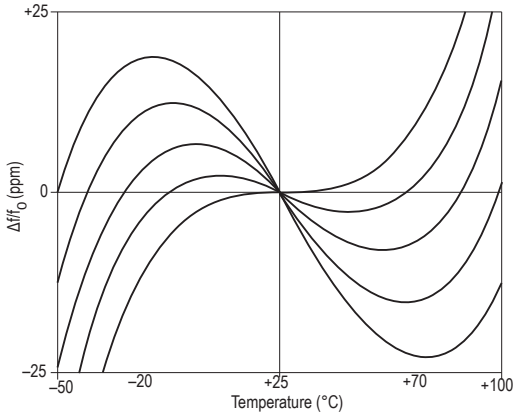
Outline (mm) - HC49/4H & HC49/4H-3L



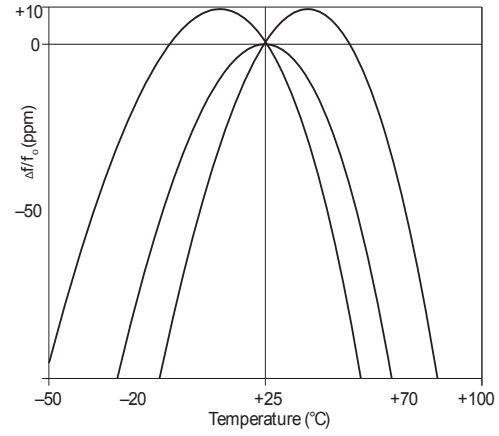
* Lower Profile Options
HC49/3.5H 3.7mm max
HC49/3H 3.1mm max
HC49/2.5H 2.7mm max

Pin connections
1. Crystal
2. Case & GND
3. Crystal

Typical Frequency vs Temperature Curves for various angles of AT-cut crystals



Typical Frequency vs Temperature Curves for various angles of BT-cut crystals



Electrical Specifications - maximum limiting values

Frequency Range	Frequency Tolerance @25°C ±2°C	Operating Temperature Range	Frequency Stability Available Over Operating Temperature Range		ESR Max	Vibration Mode
			Minimum	Maximum		
3.2 to <4.0MHz	±10ppm to ±100ppm	0 to 50°C	±15ppm	±100ppm	300Ω	Fundamental AT cut
		–10 to 60°C	±20ppm			
		–20 to70°C				
		–30 to 80°C	±25ppm			
		–40 to 85°C	±30ppm			
		–55 to 105°C	±100ppm	±500ppm		
4.0 to <5.5MHz		0 to 50°C	±15ppm	±100ppm	130Ω	
		–10 to 60°C	±20ppm			
		–20 to70°C				
		–30 to 80°C	±25ppm			
		–40 to 85°C	±30ppm			
		–55 to 105°C	±100ppm	±500ppm		
5.5 to <8.0MHz		0 to 50°C	±15ppm	±100ppm	60Ω	
		–10 to 60°C	±20ppm			
		–20 to70°C				
		–30 to 80°C	±25ppm			
		–40 to 85°C	±30ppm			
		–55 to 105°C	±100ppm	±500ppm		
8.0 to 40.0MHz		0 to 50°C	±15ppm	±100ppm	40Ω	
		–10 to 60°C	±20ppm			
		–20 to70°C				
		–30 to 80°C	±25ppm			
		–40 to 85°C	±30ppm			
		–55 to 105°C	±100ppm	±500ppm		
27.0 to 50.0MHz	Inclusive with Frequency Stability	0 to 50°C	±50ppm	±100ppm	40Ω	Fundamental BT cut
		–10 to 60°C	±70ppm			
		–20 to70°C	±100ppm			
26.0 to 100.0MHz	±10ppm to 100ppm	0 to 50°C	±15ppm	±100ppm	100Ω	3rd Overtone AT cut
		–10 to 60°C	±20ppm			
		–20 to70°C				
		–30 to 80°C	±25ppm			
		–40 to 85°C	±30ppm			
		–55 to 105°C	±100ppm	±500ppm		
Note: For other frequency / specification combinations, please contact our sales offices						